Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

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1. (Currently amended) A recombinant ~~microorganism~~ gram negative enteric bacterium that displays on its surface a binding moiety that~~, when administered to an animal, competes with a ligand for binding to a receptor for the ligand, wherein the binding moiety comprises an oligosaccharide which comprises a sugar residue that is attached to an acceptor moiety by a glycosyltransferase that is encoded by an exogenous nucleic acid which is present in the microorganism~~ acts as a receptor mimic, the binding moiety being a receptor mimic of a receptor for a toxin of a pathogenic microorganism or an adhesin of a pathogenic microorganism, wherein the binding moiety consists of an oligosaccharide which comprises a sugar residue that is attached to an acceptor moiety by a glycosyltransferase that is encoded by an exogenous nucleic acid which is present in the bacterium, said oligosaccharide forming part of a lipopolysaccharide molecule.

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2. (Cancelled)

3. (Currently amended) The recombinant ~~microorganism~~ bacterium of claim 1, wherein the oligosaccharide further comprises at least a second sugar residue that is attached to an acceptor moiety by at least a second glycosyltransferase, the second glycosyltransferase being encoded by a second exogenous nucleic acid which is present in the bacterium.

4-7. (Cancelled).

8. (Currently amended) The recombinant ~~microorganism~~ bacterium of claim ~~7~~ 1, wherein the toxin is an enterotoxin.

9. (Currently amended) The recombinant ~~microorganism~~ bacterium of claim ~~7~~ 1, wherein the toxin is selected from the group consisting of shiga toxins, clostridial toxins, cholera toxins, *E. coli* enterotoxins, and Staphylococcal enterotoxins.

10-14. (Cancelled)

15. (Currently amended) The recombinant ~~microorganism~~ bacterium of claim 9, wherein the toxin is selected from the group consisting of cholera toxin, *E. coli* heat labile enterotoxin types I and II, and ST toxins.

16-36. (Cancelled).

37. (Currently amended) The recombinant ~~microorganism~~ bacterium of claim 1, wherein the binding moiety comprises an oligosaccharide selected from the group consisting of

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Galα[1→4]Galβ[1→4]Glc,

Galα[1→4]Galβ,

GalNAcβ[1→3]Galα[1→4]Galβ[1→4]Glc,

Galβ[1→4]GlcNAc,

Galα[1→3]Galβ[1→4]Glc,

Galα[1→3]Galβ[1→4]GlcNAc,

Galβ[1→4]GlcNAc β[1→3]Galβ[1→4]Glc,

Glcα[1→6]Glc,

Glcα[1→6]Glcα[1→6]Glc,

NeuNAc,

Galβ[1→3]GalNAc β[1→4]Galβ[1→4]Glc,
|
NeuNAcα[2→3]

Galβ[1→3]GalNAcβ[1→4]Galβ[1→4]Glc,

GalNAcβ[1→4]Gal,

GalNAc,

Gal,

NeuGc→GM3, and

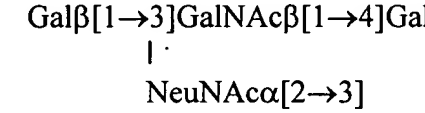
NeuNAc→GM3.

38-40. (Cancelled)

41. (Currently amended)The recombinant ~~microorganism~~ bacterium of claim 37, wherein the binding moiety comprises NeuNAc.

42. (Cancelled)

43. (Currently amended)The recombinant ~~microorganism~~ bacterium of claim 37, wherein the binding moiety comprises the oligosaccharide:



44. (Cancelled)

45. (Currently amended)The recombinant ~~microorganism~~ bacterium of claim 1, wherein the binding moiety is a mimic of natural receptor for adhesins or toxins produced by a micro-organism selected from a group of genera consisting of *Escherichia, Salmonella, Shigella, Citrobacter, Helicobacter, Yersinia, Vibrio, Aeromonas, Campylobacter, Pseudomonas, Pasteurella, Neisseria, Haemophilus, Klebsiella, Staphylococcus, Streptococcus*, *Clostridium*, rotavirus, and *Entamoeba.*

46. (Currently amended) The recombinant ~~microorganism~~ bacterium of claim 1, wherein the ~~microorganism~~ bacterium further comprises one or more exogenous enzymes involved in synthesis of a nucleotide sugar which serves as a donor for the glycosyltransferase.

47. (Currently amended)The recombinant ~~microorganism~~ bacterium of claim 46, wherein the nucleotide sugar is selected from the group consisting of GDP-Man, UDP-Glc, UDP-Gal, UDP-GlcNAc, UDP-GalNAc, CMP-sialic acid, GDP-Fuc, and UDP-xylose.

48. (Currently amended)The recombinant ~~microorganism~~ bacterium of claim 46, wherein the enzyme is a nucleotide sugar synthetase.

49. (Currently amended)The recombinant ~~microorganism~~ bacterium of claim 46, wherein the enzyme is involved in synthesis of a nucleotide that comprises the nucleotide sugar.

50. (Currently amended)The recombinant ~~microorganism~~ bacterium of claim 46, wherein the enzyme is involved in synthesis of a sugar that comprises the nucleotide sugar.

51. (Currently amended)The recombinant ~~microorganism~~ bacterium of claim 46, wherein the one or more sugars transferred to the acceptor molecule by the exogenous glycosyltransferases make up the entirety of the receptor mimic.

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52. (Currently amended) The recombinant ~~microorganism~~ bacterium as in claim 1, wherein a combination of sugars of the acceptor molecule and the one or more sugars transferred to the acceptor molecule by the exogenous glycosyltransferases make up the entirety of ~~a~~ the receptor mimic ~~of a receptor for a toxin or adhesin of a pathogenic organism~~.

53-56. (Cancelled)

57. (Currently amended) The recombinant ~~microorganism~~ bacterium as in claim ~~56~~ 1, wherein the acceptor molecule is all or a portion of the core of the lipopolysaccharide.

58. (Cancelled)

59. (Currently amended) The recombinant ~~microorganism~~ bacterium as in claim ~~58~~ 1, wherein said ~~microorganism~~ bacterium is selected from a species selected from the group consisting of *Escherichia coli* and *Salmonella enterica* sv typhimurium.

60-65. (Cancelled)

66. (Currently amended) A recombinant ~~microorganism~~ gram negative enteric bacterium expressing one or more exogenous ~~sugar transferases~~ glycosyltransferases encoded by an

exogenous nucleic acid, or one or more exogenous nucleotide sugar precursor synthesizing enzymes encoded by a second exogenous nucleic acid,

wherein said ~~microorganism~~ bacterium also ~~expressing~~ expresses an acceptor molecule,

wherein said one or more exogenous ~~sugar transferases~~ glycosyltransferases ~~being~~ are specific for the transfer of one or more sugar residues represented progressively from a non reducing terminal end of a receptor of either a toxin of a pathogenic microorganism or an adhesin of a pathogenic ~~organism~~ microorganism, and further wherein the ~~exogenous sugar transferases~~ one or more glycosyltransferases progressively ~~transferring~~ transfer said one or more sugar resides onto the acceptor molecule to thereby form a chimeric carbohydrate molecule with an exposed receptor mimic,

wherein said sugar precursor enzymes ~~forming~~ form nucleotide precursors that are transferred to said acceptor molecule to make up said chimeric carbohydrate, and said exposed receptor mimic is capable of binding the toxin or the adhesin, and further wherein a combination of sugars of the acceptor molecule and the one or more sugars transferred to the acceptor molecule make up the entirety of the receptor mimic,

and wherein said chimeric carbohydrate molecule is a lipopolysaccharide molecule.

67. (Currently amended) A pharmaceutical preparation ~~for administration to a mucosal surface~~ for enteral administration, said preparation comprising a recombinant gram negative enteric delivery ~~microorganism or a partially or fully purified non-toxic preparation of a carbohydrate molecule therefrom, at least a part of said carbohydrate molecule acting as an exposed receptor mimic, said receptor mimic capable of binding a toxin or an adhesin of a pathogen that normally binds to said mucosal surface, said pharmaceutical preparation being carried in a pharmaceutically acceptable excipient~~ bacterium and a pharmaceutically acceptable excipient,

wherein the delivery bacterium expresses one or more exogenous glycosyltransferases encoded by an exogenous nucleic acid and an acceptor molecule,

wherein said one or more exogenous glycosyltransferases are specific for the transfer of one or more sugar residues represented progressively from a non reducing terminal end of a receptor of either a toxin of a pathogenic microorganism or an adhesin of a pathogenic microorganism, and further wherein the one or more glycosyltransferases progressively transfer said one or more sugar residues onto the acceptor molecule to thereby form a chimeric carbohydrate molecule with an exposed receptor mimic,

wherein said exposed receptor mimic is capable of binding the toxin or the adhesin, and further wherein a combination of sugars of the acceptor molecule and the one or more sugars transferred to the acceptor molecule make up the entirety of the receptor mimic,

and wherein said chimeric carbohydrate molecule is a lipopolysaccharide molecule.

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68. (Cancelled)

69. (Currently amended) The pharmaceutical preparation as in claim 67, wherein the receptor mimic is a mimic of the receptor of a bacterial toxin.

70. (Original) The pharmaceutical preparation as in claim 69, wherein the toxin is selected from the group consisting of shiga toxins, clostridial toxins, cholera toxins, E. coli enterotoxins, and Staphylococcal enterotoxins.

71. (Cancelled)

72. (Original) The pharmaceutical preparation as in claim 70, wherein the toxin is a clostridial toxin.

73. (Currently amended) The pharmaceutical preparation as in claim 67, wherein the receptor mimic is partially or wholly formed within a sugar moiety ~~of~~ selected from the group ~~comprising~~ consisting of:

Galα[1→4]Galβ[1→4]Glc,

Galα[1→4]Galβ,

GalNAcβ[1→3]Gal α[1→4]Galβ[1→4]Glc,

Galβ[1→4]GlcNAc,

Galα[1→3]Galβ[1→4]Glc,

Galα[1→3]Galβ[1→4]GlcNAc,

Galβ[1→4]GlcNAc β[1→3]Galβ[1→4]Glc,

Glcα[1→6]Glc,

Glcα[1→6]Glcα[1→6]Glc,

NeuNAc,

Galβ[1→3]GalNAc β[1→4]Galβ[1→4]Glc,
|
NeuNAcα[2→3]

Galβ[1→3]GalNAcβ[1→4]Galβ[1→4]Glc,

GalNAcβ[1→4]Gal,

GalNAc,

Gal,

NeuGc→GM3, and

NeuNAc→GM3.

74. (Currently amended) The pharmaceutical preparation as in claim 67, wherein one or more exogenous nucleotide sugar precursor ~~synthesising~~ synthesizing enzymes encoded by a second exogenous nucleic acid are also expressed by said delivery ~~microorganism~~ bacterium, said sugar precursor enzymes forming precursors to make up said chimeric carbohydrate.

75. (Cancelled)

76. (Currently amended) The pharmaceutical preparation as in claim 67, wherein the delivery ~~microorganism~~ bacterium is non harmful and live.

77. (Currently amended) The pharmaceutical preparation as in claim 67, wherein the delivery ~~microorganism~~ bacterium is protected by a protective capsule or held within a protective matrix.

78-83. (Cancelled)

84. (Currently amended) The pharmaceutical preparation as in claim 67, wherein the delivery ~~microorganism~~ bacterium is killed before administration of the pharmaceutical preparation.

85. (Currently amended) The pharmaceutical preparation as in claim 84, wherein the delivery ~~microorganism~~ bacterium is killed by treatment with a chemical agent selected from the group consisting of formalin or thiomersal, or by treatment with a bactericidal antibiotic, or by exposure to heat or UV irradiation.

86-116. (Cancelled)

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117. (Currently amended) A recombinant *E. coli* that displays on its surface a binding moiety that acts as a receptor mimic when administered to an animal, and competes with a ligand for binding to a receptor for the ligand, wherein the ~~binding moiety comprises~~ receptor mimic consists of an oligosaccharide which comprises a sugar residue that is attached to an acceptor moiety by a glycosyltransferase that is encoded by an exogenous nucleic acid which is present in the ~~microorganism~~ *E. coli*, said oligosaccharide forming part of a lipopolysaccharide molecule.

118. (Currently amended) The recombinant E. ~~coil~~ coli of claim 117, wherein the oligosaccharide is Galα[1→4]Galβ[1→4]Glc.

119. (Currently amended) The recombinant E. ~~coil~~ coli of claim 117, wherein the oligosaccharide is GalNAcβ[1→3]Galα[1→4]Galβ[1→ 4]Glc.

120. (New) The recombinant bacterium as in claim 1 wherein said bacterium is *Escherichia coli.*

121. (New) The pharmaceutical preparation as in claim 67 wherein said delivery bacterium is selected from a species selected from the group consisting of *Escherichia coli* and *Salmonella enterica* sv typhimurium.

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122. (New) The pharmaceutical preparation as in claim 67 wherein said delivery bacterium is *Escherichia coli*.